Dated: August 5, 2004

Subject: Addendum No. 2 to Request for Proposal (RFP) No. JSL-52404 dated July 14, 2004 for Mars UHF Proximity Antenna.

The following inquiries have been submitted to JPL for clarification.

Question 1

Is the antenna cross-section envelope dimensions meant to represent a stayout zone outside of the envelope? (i.e., could an aperture with the same aperture area but different outline be used?)

Answer 1

The envelope dimensions are meant to provide a stay-out zone. The antenna in its stowed and deployed configurations must comply with the relevant specified dimensions.

Question 2

Will there be a PIM generation specification? If lumped circuit feed network components are used, a significant mass reduction will be realized, but a low level (perhaps -90 dBm) intermodulation noise could be generated if a multi-carrier transmission of data is used.

Answer 2

We do not have multi-carrier transmission, but we do have a rather wide band 4-Mbps signal transmitting at 437 MHz, using a direct carrier QPSK modulation, with a maximum power of 10 Watts. The PIM noise level possibly generated due to this signal at the receive frequency of 401 MHz (36 MHz away) must be less than -145 dBm.

Question 3

What is the expected thermal environment for operation, and for survival?

Answer 3

The thermal requirements are discussed in Section 7.4.1 of the Exhibit 1 (Functional, Development, and Testing Requirements Document). More specifically, the high and low temperatures shall be -125 to +135 C°. This antenna is primarily intended for the Mars orbit environment.

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Question 4

Is the gain requirement for on-axis only, or over some angular region?

Answer 4

The gain requirement is for the peak gain as specified in Section 4.2 of the Exhibit 1 (Functional, Development, and Testing Requirements Document), where the possible variation of the peak direction with frequency is also discussed.

Question 5

The mini-spec implies that the antenna will need to be deployed. Can the mounting interface be defined? Is a deployment mechanism included in this procurement?

Answer 5

The antenna itself may need to be deployed, and in that case, the deployment of the antenna and its parts (such as radiating elements, ground plane panels, etc.) from their stowed position to fully deployed configuration for RF measurements, is part of the procurement. However, the deployment of the antenna from its spacecraft stowed position, and the mounting and articulation mechanisms (gimbals, etc.) are not part of the RFP. If need be, they may be discussed and coordinated with the contractor at the Engineering Model Design phase.

Question 6

Please establish an order of importance to the parameters of increased antenna gain, mass reduction, antenna size.

Answer 6

There is no order of priority in meeting the gain, mass and size requirements. All must be met. However, within the specified range, a priority may be given to increased antenna gain, mass reduction, antenna size, in that order.